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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.   :   10/775,886   Confirmation No. 1418

Applicant   :   N. MATSUNAMI et al

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Title   :   STORAGE DEVICE

TC/AU   :   2188

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Docket No.   :   H-1210

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Commissioner for Patents
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RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Sir:

In response to the Notification of Non-Compliant Brief dated December 13, 2007, Applicants submit the following summary of the claimed subject matter, which was previously submitted as section V of the Appeal Brief. Please substitute this summary of the claimed subject matter for the previously submitted summary of the claimed subject matter.

V.   SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention is directed to a method for migrating a file between a first system and a second system as recited in independent claim 39. The present invention is also directed to a system for storing a file as set forth in independent

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claim 41. Each of these claims is now discussed below in conjunction with the

specification and drawings:

Independent Claim 39

       39. (Previously Presented) A method for migrating a file between a first system(Fig. 13, 1 (STR 0)) and a second system (Fig. 13, 1a (STR 1),
       wherein the first system (Fig. 13, 1 (STR 0) includes a first file access controller (Fig. 4, 11001 and 11004), a first storage controller (Fig. 4, 11008 and 11009), and a plurality of first magnetic disk devices (Fig. 1, 170 and 171), and the first file access controller (Fig. 4, 11001 and 11004) receives a file access request from a computer and controls to access a file according to the file access request (Specification page 13, line 3 to page 15, line 1, file system program 110043), and

Fig. 1 of the present application illustrates a storage device 1 having a file

access controller and storage controller (or disk array controller), which are referred

to as NAS channel adaptors or CHNs (see Specification, page 7, line 15 to page 8,

line 14). The CHNs are shown in more detail in Fig. 4, namely including a file access

control CPU 11001, a file access control memory 11004, a disk array control CPU

11008 and a disk array control memory 11009 (see Specification, page 11, lines 16-

22). The file access control CPU 11001 is a processor for controlling file access.

The file access control memory 11004 is connected to the file access control CPU

11001 and stores programs (such as file system program 110043) executed by the

file access control CPU 11001 as well as control data (see Specification, page 11,

lines 16-22 and page 13, line 3 to page 15, line 1)). Storage device 1 also includes a

plurality of magnetic disk devices 170 and 171.

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> **wherein the second system (Fig. 13, 1a (STR 1)) includes a second
> file access controller (Fig. 13, 11001a and 11004a), a second storage
> controller (Fig. 13, 11008a and 11009a), and a plurality of second
> magnetic disk devices (Fig. 13, 170a), and the second file access
> controller (Fig. 13, 11001a and 11004a) receives a file access request
> and controls to access a file according to the file access request
> (Specification page 13, line 3 to page 15, line 1 and page 36, line 15 to
> page 37, line 5, file system program 110043),**

Fig. 13 illustrates storage device 1 coupled to another storage device 1a,

which has similar components as shown in Fig. 1 for storage device 1 (see

Specification, page 36, lines 9-11). Therefore, storage device 1a includes a second

file access controller, a second disk array controller and second magnetic devices as

shown in Fig. 13.

> **the method comprising steps of:**
> **at the first system (Fig. 13, 1 (STR 0)), receiving an open request
> from the computer (Fig. 13, 400) for storing a file (Specification page 26,
> lines 17-19, file abc.doc) in the first system (Fig. 13, 1 (STR 0)), the open
> request including information of a policy, which is set by an application
> creating the file (Specification page 26, line 20 to page 27, line 6);**

The first storage device 1 receives an open request from a computer for

storing a file in the first system, the open request including information of a policy,

which is set by an application creating the file (see Specification, page 26, line 17 to

page 27, line 6). The policy category is information that is set by the application that

created the file and is designated by the application with regard to file storage

conditions (see Specification, page 22, lines 16-18). The policy category

information is included in the open request as static property information, since open

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processing is executed to store the file for the first time (see Specification, page 26,

lines 20-23).

A file storage management section 1100433 creates a file storage

management table 1100435 to correspond to a file handler assigned to a file named

"abc.doc". The file storage management section also creates a file property

information management table 1100438 for the file, correlates it with the file storage

management table and stores therein the static property information (which includes

the policy category information set by the application that created the file) (see

Specification, page 27, line 20 to page 28, line 10 and page 31, lines 11-15). The file

storage management table 1100435 and file property information management table

are then appropriately stored in the first storage device (see Specification, page 28,

lines 8-10). Examples of tables 1100435 and 1100438 are illustrated in Figs. 10 and

11, respectively.

**storing the file (Specification page 28, lines 17-19, file abc.doc) in
the first system (Fig. 13, 1 (STR 0));**

Using the file handler obtained in the open processing set forth above, a write

request is issued to the CHN0 (1100) to store data of the file abc.doc in the storage

device 1 (see Specification, page 28, lines 17-19).

**migrating the file (Specification page 40, lines 18 to page 42, line
5) from the first system (Fig. 13, 1 (STR 0)) to the second system (Fig. 13,
1a (STR 1)) according to the policy; and**

The file ("FILE00001" which is originally "abc.doc") is migrated from storage

device 1 to storage device 2 according to information stored in the file property

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information management table 1100438 (see Specification, page 38, line 23 to page

43, line 3). Upon migration, the file storage management section 1100433 changes

the link destination file name to the new file name (such as "STR1-FILE 00001") in

the file storage management table 1100435 of the original file ("FILE00001")(see Fig.

12 and Specification, page 43 lines 6-13). Therefore, according to the present

invention, it is possible to determine storage regions in which to store data by taking

into consideration the type of application that generates and uses the data and to set

a migration policy accordingly (see Specification, page 3, lines 16-21).

**leaving information indicating a migration destination
(Specification page 43, lines 6-13 and Fig. 12) of the file and information
indicating the application (Specification page 22, lines 10-11) creating
the file and setting the policy (Specification, page 28, lines 8-10, Figs. 10
and 11, 1100435 and 1100438) in the first system (Fig. 13, 1 (STR 0)).**

The file storage management table 1100435 and file property information

management table 1100438 are stored in the first storage device (see Specification,

page 28, lines 8-10). Examples of tables 1100435 and 1100438 are illustrated in

Figs. 10 and 11, respectively. Furthermore, the file property information

management table 1100438 of the original file can be referenced in order to perform

further migration (see Specification, page 39, line 16 to page 40, line 4 and page 47,

lines 8 – 11).

Independent Claim 41

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The support for independent claim 41 is similar to the support for independent claim set forth above. However, independent claim 41 recites the management of first and second file systems by first and second file access controllers, respectively, as well as the management of information of the policy set for the file by the first file access controller. Figs. 4 and 5 as well as their corresponding description in the Specification set forth the details of such management by the first and second file access controllers (see Specification, page 11, line 15 to page 15, line 1).

41. (Previously Presented) A system for storing a file comprising:

a first system (Fig. 13, 1 (STR 0)) including a first file access controller (Fig. 4, 11001 and 11004) and a first storage system (Fig. 1, 170 and 171 and Fig. 4, 11008 and 11009), wherein the first storage system has a plurality of first magnetic disk devices (Fig. 1, 170 and 171) and a first storage controller (Fig. 4, 11008 and 11009) coupled to the plurality of first magnetic disk devices (Fig. 1, 170 and 171), and the first file access controller (Fig. 4, 11001 and 11004) manages a first file system (Abstract) configured in the first system (Fig. 13, 1 (STR 0)), receives a file access request, and controls to access a file according to the file access request (Specification page 13, line 3 to page 15, line 1, file system program 110043), and

Fig. 1 of the present application illustrates a storage device 1 having a file access controller and storage controller (or disk array controller), which are referred to as NAS channel adaptors or CHNs (see Specification, page 7, line 15 to page 8, line 14). The CHNs are shown in more detail in Fig. 4, namely including a file access control CPU 11001, a file access control memory 11004, a disk array control CPU 11008 and a disk array control memory 11009 (see Specification, page 11, lines 16-22). The file access control CPU 11001 is a processor for controlling file access.

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The file access control memory 11004 is connected to the file access control CPU

11001 and stores programs (such as file system program 110043) executed by the

file access control CPU 11001 as well as control data (see Specification, page 11,

lines 16-22 and page 13, line 3 to page 15, line 1). Storage device 1 also includes a

plurality of magnetic disk devices 170 and 171.

> **a second system (Fig. 13 1a (STR 1)) including a second file
> access controller (Fig. 13, 11001a and 11004a) and a second storage
> system (Fig. 13, 170a, 11008a and 11009a), wherein the second storage
> system has a plurality of second magnetic disk devices (Fig. 13, 170a)
> and a second storage controller (Fig. 13, 11008a and 11009a) coupled to
> the plurality of second magnetic disk devices (Fig. 13, 170a), and the
> second file access controller (Fig. 13, 11001a and 11004a) manages a
> second file system (Abstract) configured in the second system (Fig. 13
> 1a (STR 1)), receives a file access request, and controls to access a file
> according to the file access request (Specification page 13, line 3 to
> page 15, line 1 and page 36, line 15 to page 37, line 5, file system
> program 110043),**

Fig. 13 illustrates storage device 1 coupled to another storage device 1a,

which has similar components as shown in Fig. 1 for storage device 1 (see

Specification, page 36, lines 9-11). Therefore, storage device 1a includes a second

file access controller, a second disk array controller and second magnetic devices as

shown in Fig. 13.

> **wherein the first file access controller (Fig. 4, 11001 and 11004)
> receives an open request for storing a file (Specification page 26, lines
> 17-19, file abc.doc) in the first system (Fig. 13, 1 (STR 0)) from a
> computer (Fig. 13, 400), the open request including information of a
> policy set for the file by an application creating the file (Specification
> page 26, line 20 to page 27, line 6), stores the file (Specification page 28,
> lines 17-19, file abc.doc) in the first storage system (Fig. 1, 170 and 171**

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and Fig. 4, 11008 and 11009), and manages the information of the policy set for the file (Specification page 27, line 10 to page 28, line 10),

The first storage device 1 receives an open request from a computer for storing a file in the first system, the open request including information of a policy, which is set by an application creating the file (see Specification, page 26, line 17 to page 27, line 6). The policy category is information that is set by the application that created the file and is designated by the application with regard to file storage conditions (see Specification, page 22, lines 16-18). The policy category information is included in the open request as static property information, since open processing is executed to store the file for the first time (see Specification, page 26, lines 20-23).

A file storage management section 1100433 creates a file storage management table 1100435 to correspond to a file handler assigned to a file named "abc.doc". The file storage management section also creates a file property information management table 1100438 for the file, correlates it with the file storage management table and stores therein the static property information (which includes the policy category information set by the application that created the file) (see Specification, page 27, line 20 to page 28, line 10 and page 31, lines 11-15). The file storage management table 1100435 and file property information management table are then appropriately stored in the first storage device (see Specification, page 28, lines 8-10). Examples of tables 1100435 and 1100438 are illustrated in Figs. 10 and 11, respectively.

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wherein when the file stored in the first system (Fig. 13, 1 (STR 0)) satisfies a condition of the policy, the file is migrated (Specification page 40, lines 18 to page 42, line 5) from the first system (Fig. 13, 1 (STR 0)) to the second system (Fig. 13 1a (STR 1)), and

The file ("FILE00001" which is originally "abc.doc") is migrated from storage device 1 to storage device 2 according to information stored in the file property information management table 1100438 (see Specification, page 38, line 23 to page 43, line 3). Upon migration, the file storage management section 1100433 changes the link destination file name to the new file name (such as "STR1-FILE 00001") in the file storage management table 1100435 of the original file ("FILE00001")(see Fig. 12 and Specification, page 43 lines 6-13). Therefore, according to the present invention, it is possible to determine storage regions in which to store data by taking into consideration the type of application that generates and uses the data and to set a migration policy accordingly (see Specification, page 3, lines 16-21).

wherein information indicating a migration destination (Specification page 43, lines 6-13 and Fig. 12) of the file and information indicating the application (Specification page 22, lines 10-11) creating the file and setting the policy (Specification page 28, lines 8-10, Figs. 10 and 11, 1100435 and 1100438)) remain stored in the first system (Fig. 13, 1 (STR 0)).

The file storage management table 1100435 and file property information management table are stored in the first storage device (see Specification, page 28, lines 8-10). Examples of tables 1100435 and 1100438 are illustrated in Figs. 10 and 11, respectively. Furthermore, the file property information management table 1100438 of the original file can be referenced in order to perform further migration (see Specification, page 39, line 16 to page 40, line 4 and page 47, lines 8 – 11).

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Conclusion

In view of the revision to Section V of the Appeal Brief as set forth above, it is

submitted that the Appeal Brief is now compliant.   The Commissioner is hereby

authorized to charge Deposit Account No. 50-1417 for any fees that are deemed

necessary.

Respectfully submitted,

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